

Application No.: 10/728,960

Docket No.: 21994-00045-US1

**AMENDMENTS TO THE SPECIFICATION**

Please replace paragraph [0006] with the following amended paragraph:

[0006]

Fig. 33 is a cross sectional view of a next generation type information recording medium having higher density than a current DVD disc. Such a next generation type information recording medium has been developed actively. In Fig. [[35]] 33, a next generation type information recording medium 75 in high density is composed of a substrate 71 having [[a]] an information recording surface 710 in a rugged shape on its surface, a recording layer 72 and a light transmitting layer 76 having a thickness of 0.1 mm, wherein they are laminated in order. The substrate 71 is made of a transparent plastic disc having a thickness of 1.1 mm and a diameter of 120 mm and manufactured by the stamper method as the same method as for a DVD disc. The next generation type information recording medium 75 is recorded and reproduced by irradiating a laser beam "LB" having a wavelength of 400 nm on [[a]] an information track of the information recording surface 710 and a concave shaped section "AA" or a groove of the substrate 71.

Please replace paragraph [0024] with the following amended paragraph:

[0024]

The energy ray source 121 radiates an electromagnetic wave having a wavelength of 10 nm to 1500 nm (such as  $\gamma$ -ray, X-rays, extremely deep-ultraviolet, deep-ultraviolet, ultraviolet, visible radiation and infrared radiation) and a particle beam (such as  $\alpha$ -ray,  $\beta$ -ray, proton beam, neutron beam and electron beam).

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Please replace paragraph [0026] with the following amended paragraph:

[0026]

The relative motion supplying unit 100 is composed of a motor and linear driving mechanism and can perform various ~~movement~~ movements such as rotating, X-axis directional moving, Y-axis directional moving and Z-axis directional moving or combined movement of them.

Please replace paragraph [0086] with the following amended paragraph:

[0086]

Even in a case that where jitter exists in reproduced data, ~~there is existed a merit that the~~ influence of the jitter can be minimized. Further, with assuming that a code to be recorded is ideally symmetrical, total length of the amplitude sections 2521 is made equal to that of the non-amplitude sections 2520 and resulted in that no DC (direct current) component ~~is existed~~ in a reproduced signal. It is advantageous to digital recording that no DC component releases a burden on data decoding and servo.

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Please replace paragraph [0092] with the following amended paragraph:

[0092]

By equalizing each amplitude and length as mentioned above, judging "0" or "1" can be performed by sufficient threshold value of amplitude when reproducing. Further, data arranged in series can be read out by one threshold value of time, so that a reproducing circuit can be simplified. Furthermore, in [[a]] case [[that]] jitter exists in reproduced data, ~~there is existed a merit that~~ the influence of the jitter can be minimized. Moreover, with assuming that a code to be recorded is ideally symmetrical, total length of the higher frequency sections 2611 is equal to that of the lower frequency sections 2610 and resulted in [[that]] no DC component ~~is existed~~ in a reproduced signal. It is advantageous to digital recording that no DC component releases a burden on data decoding and servo.

Please replace paragraph [0104] with the following amended paragraph:

[0104]

It is acceptable for each physical length of the advancing phase section 2701 and the receding phase section 2700 to be identical or not. If each physical length is identical, data, which are combined in series, can be divided into pieces by a predetermined time (clock) when reproducing, so that a reproduction circuit can be simplified. Further, in [[a]] case [[that]] jitter exists in reproduced data, ~~there is existed a merit such that~~ the influence of the jitter can be minimized.

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Please replace paragraph [0109] with the following amended paragraph:

[0109]

When address data "10110" is recorded, for example, as shown in Fig. 27, the rapidly falling section 2710, the rapidly rising section 2720, the rapidly falling ~~section 2721~~ section 2721, the rapidly falling section 2721 and the rapidly rising ~~section 2720~~ section 2720 are sequentially recorded in shape. Such a recording method that records data by difference between a rising angle and a falling angle is advantageous for the data to be demodulated by inputting the data into a high-pass filter and extracting a differential component. Further, it is also advantage of the recording method that the data can be reproduced even under low C/N condition.

Please replace paragraph [0176] with the following amended paragraph:

[0176]

As mentioned above, it is found that each information recording medium 11 of the embodiments 1 through 5 can obtain sufficient modulation amplitude and sufficiently suppress an error rate ~~as low as sufficiently~~. Further, it is also found that an address signal can be demodulated excellently.

Please replace paragraph [0180] with the following amended paragraph:

[0180]

On the contrary, a weak signal of which modulation amplitude (equal to "(I8H - I8L)/I8H") is the order of 0.37 is obtained from a total sum signal of the pickup 50. Further, an error rate of reproduced signal, which is obtained from the address information demodulator 54, is  $2 \times 10^{-3}$ . Consequently, data that is full of errors is reproduced.

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Accordingly, the information recording medium of the comparative example 2 is ~~resulted~~ in defective.

As exhibited in the embodiments 1 through 5 and the comparative examples 1 and 2, by using the information recording medium 11, which is composed of the light transmitting layer 10 having thickness within a range of 0.05 mm to 0.12 mm and recorded with address information that is modulated so as to be the same period and phase on both sidewalls of a convex shaped section that projects into the light transmitting layer 10. Further, by recording on and reproduced from the convex shaped section, the information recording medium 11 can be an ideal information recording medium that satisfies all parameters of recording on the recording layer 9 such as modulation amplitude, an error rate and an address error rate totally.